allowed by using a microprocessor as an inverter driver or ballast control element. The multiple software decisions allow for many operational advantages such as lamp start up and control if a lamp is suddenly removed from the fixture or fails while operating. The resulting action by the microprocessor allows for safer and more reliable operation while greatly extending lamp life. Each box rectangular box states the function implemented by the software for each different type of ballast. The arrows pointing at the diamond shaped boxes shows the data needed to make decisions.

Although the present invention has been described in connection with preferred embodiments thereof, many variations and modifications will now become apparent to those skilled in the art. It is preferred, therefore, that the present invention be limited, not by the specific disclosure herein, but only by the appended claims.

What is claimed is:

1. A gas discharge lighting system comprising:

a gas discharge lighting device;

a source of input power;

a electronic ballasting circuit having a regulated direct current requirement and coupled between said gas discharge lighting device and said source of input power comprising;

an alternating current-to-direct current conversion means;

a power regulator connected to said conversion means for converting the output of said alternating current-to-direct current to said regulated direct current required to operate said ballasting circuit;

a controllable output direct current to alternating current inverter that operates with a nearly square wave output at a frequency above that of audible sound;

an impedance network interposed between said inverter and said gas discharge device to modify said square wave output of said inverter to provide proper operation of said gas discharge lighting device;

a controlling device that controls the operation of said inverter and thus, via said impedance network, the output to said gas discharge lighting device; and

a light sensing device capable of sensing the amount of illumination provided by said gas discharge lighting device and connected to said controlling device to allow said controlling device to maintain the amount of illumination at a preset level.

2. The gas discharge lighting system as set forth in claim 1 wherein said light sensing device is mounted internally within the said ballasting circuit and including a fiber optic wire for conducting light from a user specified location outside of said electronic ballasting circuit to said internally mounted light sensing device.

3. The gas discharge lighting system as set forth in Claim 2 wherein light conducted by said fiber optic wire is in the infra red spectrum for control signals to adjust various ballasting operating parameters including a desired light level of said gas discharge lighting device.

4. The gas discharge lighting system as set forth in Claim 2 wherein light conducted by said fiber optic wire is in the infra red spectrum for control signals and in the visible light spectrum for feedback of light intensity in the area illuminated by said gas discharge lighting device.

5. The gas discharge lighting system as set forth in claim 1 wherein said controlling device is a microprocessor coupled to said gas discharge device to monitor its operation and interconnected with said controllable output direct current-to-alternating current inverter.